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CH'ANG-HSIN-TIEN MISSILE RESEARCH CENTER

CH'ANG-HSIN-TIEN, CHINA

OCTOBER 1963

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ILLUSTRATIONS

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PREFACE

This Photo Intelligence Report responds to an OACSI requirement for information concerning the military aspects of the Ch'ang-hsin-tien Missile Research Center (CHTMRC). This is a large missile-related facility under construction not far from Peiping, China. Because aerial photography of 1945 shows no significant construction of facilities in the immediate area occupied by the Center, it is assumed that all present facilities were built after World War II. Comparison of June 1959 photography and subsequent coverage indicates that most construction was accomplished after mid-June 1959. It is believed that this report will provide complete information on the status of the Center and its surrounding facilities up to and including December 1962. Measurements made of significant buildings and facilities are shown in appropriate tables. These measurements are approximate but should be accurate within plus or minus 10 feet. The photos in this report

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Figure 1. Location of CHTMRC, Ch'ang-hsin-tien, China.

INTRODUCTION

The CHTMRC (39°50'20"N 116°08'20"E) lies approximately 12.5 nautical miles (nm) west-southwest of Peiping, near Ch'ang-hsin-tien (see Figure 1). It is served by a single-track rail spur and an all-weather road from Ch'ang-hsin-tien, both of which connect with the main rail line and road to Peiping. The Center is being built probably to develop and test propulsion units for high-thrust rocket and missile engines. Closely associated areas near the Center suggest a functional interdependence of facilities. These facilities are situated within a 2.5-nm radius of the Center, and all are west of the Yung-ting River.

To provide a more comprehensive analysis of the Center, it is considered advantageous to trace the growth pattern of its associated facilities. These facilities, all of which are described herein, include the Static Test Area, two associated fabrication industries, the former Ch'ang-hsin-tien Ammunition Storage Area, a thermal electric powerplant, a new military/civilian housing area, Military Barracks Area Nan-ying, Ch'ang-hsin-tien Military Barracks and Depot, an unidentified industry, Peiping Petroleum Products Storage Kang-wa, a probable construction materials processing plant, an unidentified secured area, Ch'ang-hsin-tien Railroad Yards and Locomotive Works, and an unidentified storage area (see Figure 2). Each area is illustrated by a photo or sketch. Figure 18, at the end of this report, indicates the overall chronological development of the Center.

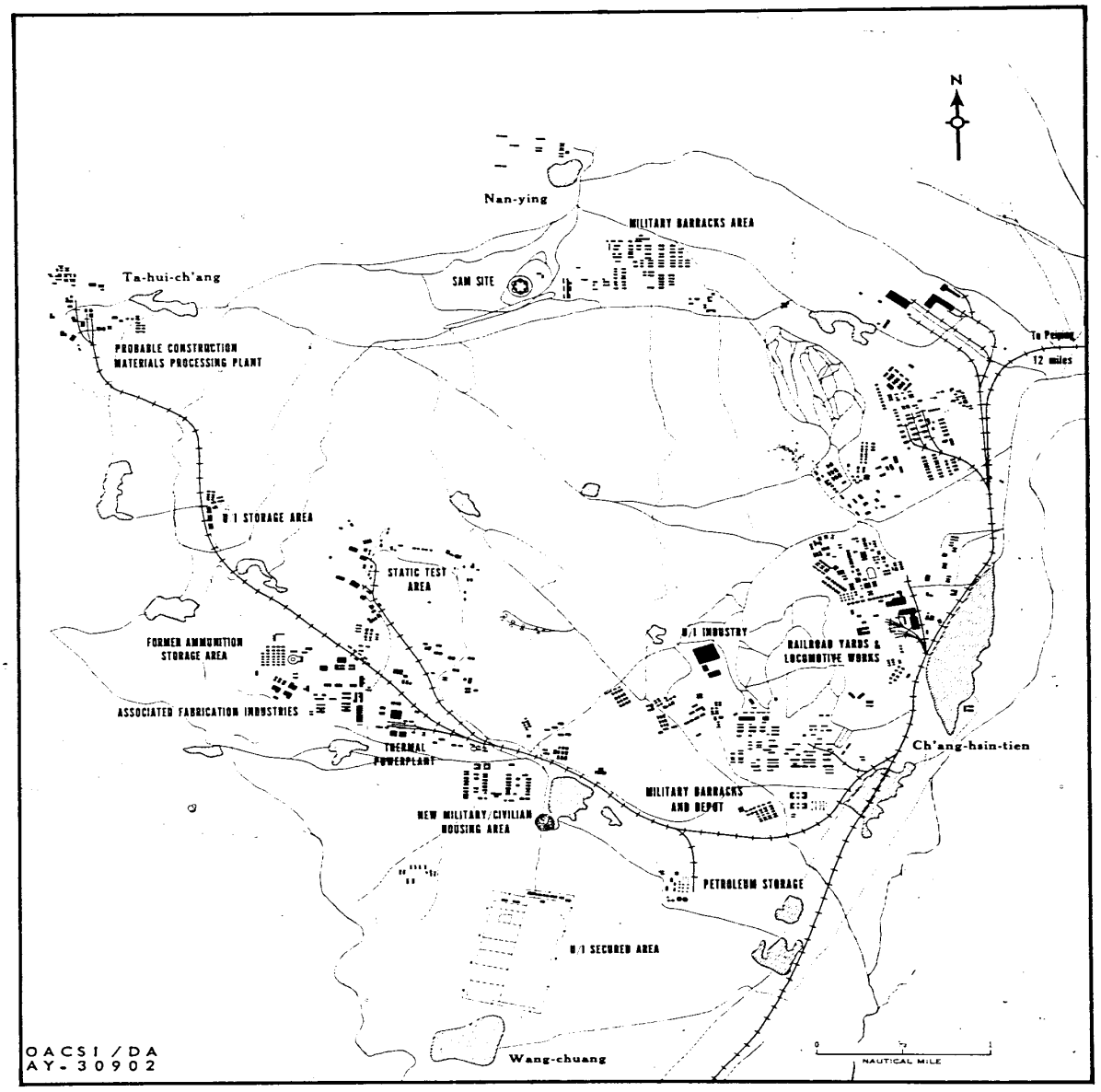

Figure 2. Specific Location of CHTMRC Facilities.

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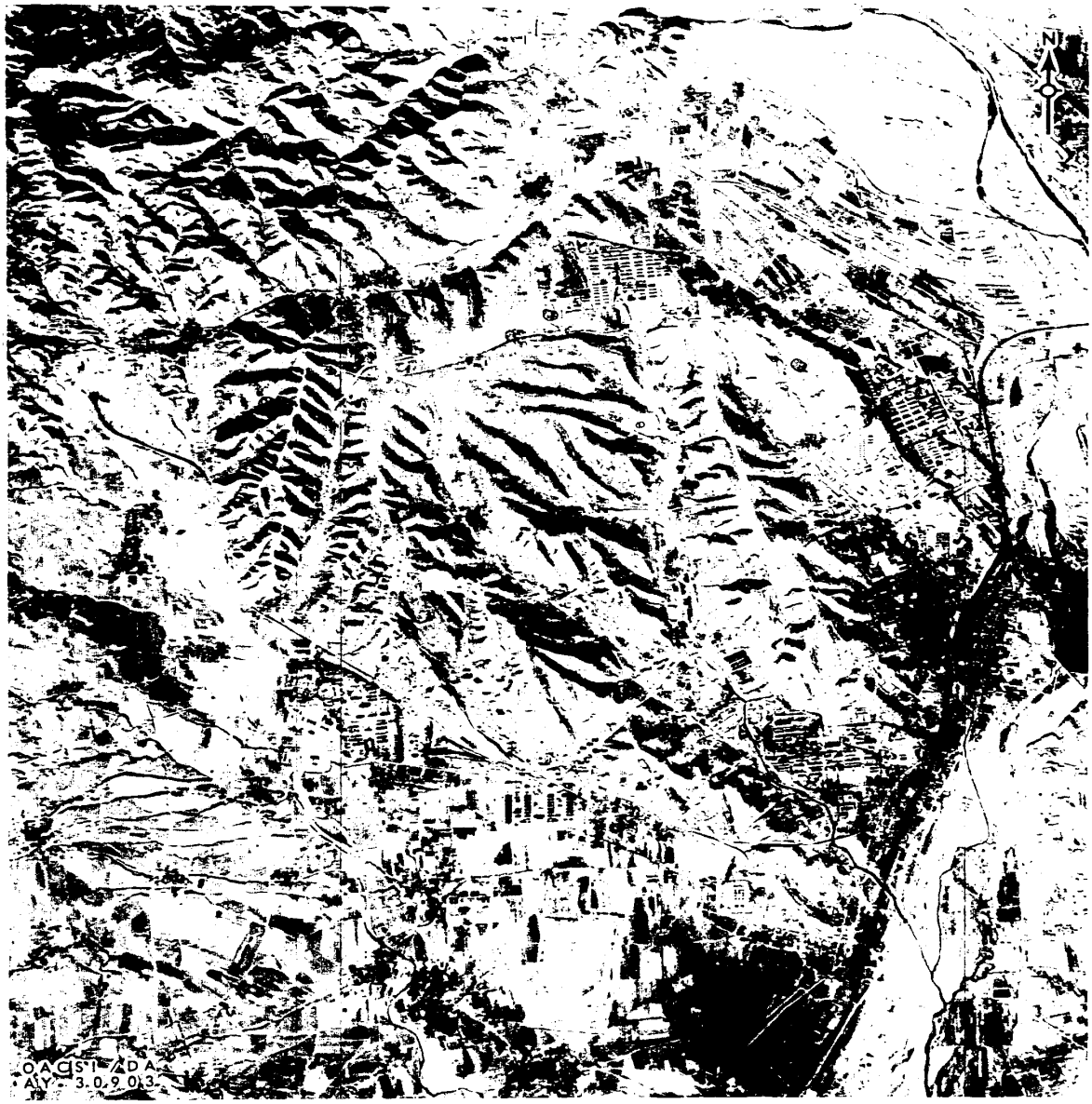

Figure 3. CHTMRC and Associated Facilities.

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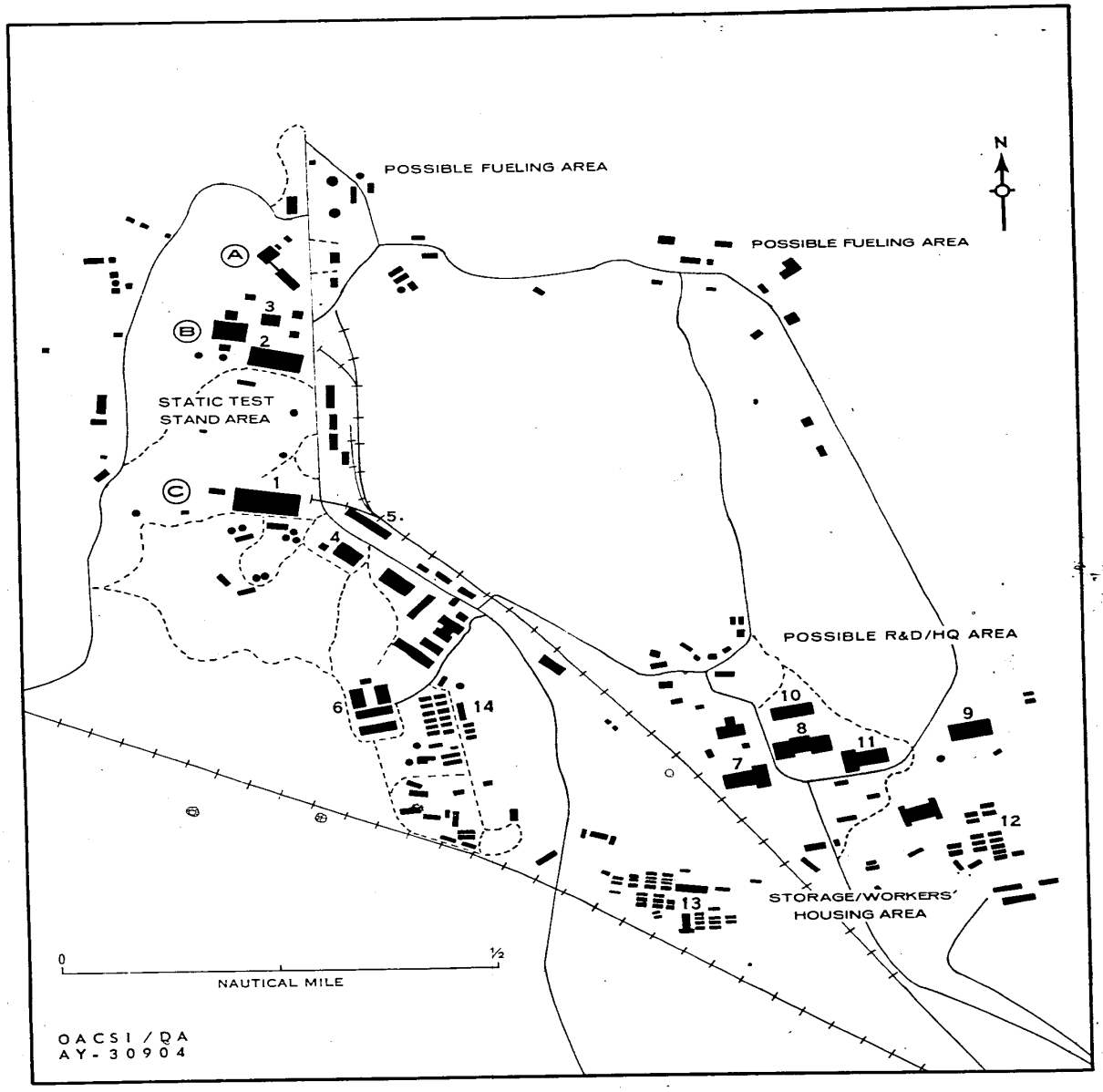

Figure 4. Facilities of Static Area. See Table I on page 15.

DISCUSSION

A. Static Test Area

The Static Test Area measures approximately 2,500' x 1,000', through which extends a prominent ridge. This area, north of the main facilities that comprise the CHTMRC, is apparently unsecured and is served by a rail spur and an all-weather road approximately 25 feet wide, from which feeder roads run to all the other facilities in the area. Construction in the Static Test Area progressed rapidly after June 1959, when photography showed only small sheds, a probable aircraft landing beacon, and scarring at the crest of the ridge as indications that preliminary surveying had already begun. By December 1962 facilities in the area were probably operational.

Facilities in the Static Test Area include the Test Stand Area; a storage/workers' housing area; two possible fueling areas; a possible R & D/headquarters area; and about 15 scattered, miscellaneous support buildings (see Figures 3 and 4). The Test Stand Area is the most important facility in the Static Test Area. It features three large vertical static test stands and their associated buildings. Designated A, B, and C (from north to south), these test stands were constructed on the west side of the prominent ridge to take advantage of the high ground and the deep natural ravines. Photography of December 1962 indicates that Test Stands A and B are complete, while Test Stand C appears to be in the final stages of construction. Figure 5 is an artist's concept of the Test Stand Area as it appears on December 1962 photography. Descriptions of each of the test stands and the other facilities in the Static Test Area follow.

Test Stand A, the smallest of the three test stands, was in late stages of construction in September 1961. Served by road, the stand is estimated to be approximately 60 feet high. A hardstand about 160' x 150' surrounding the test stand appears to overhang the ravine, forming a lip about 65 feet above the floor of the ravine. Extending from the lip of the test stand to the bottom of the ravine is a reinforced concrete blast deflector that has no visible steel frame bucket. While the origin of the test stand design cannot be determined, it resembles one of the Dnepropetrovsk (DAZ), U.S.S.R., test stands seen on TALENT-KEYHOLE photography in April 1962.

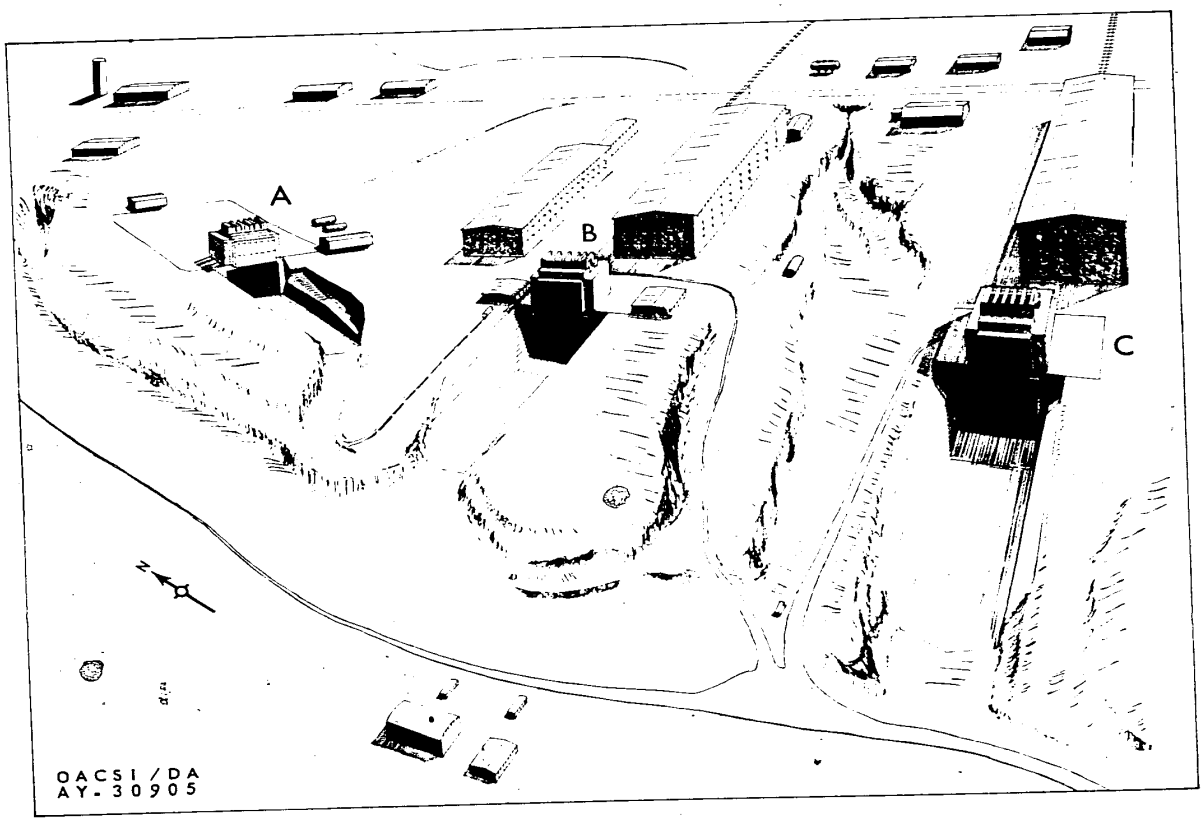

Figure 5. Artist's Concept of Test Stand Area.

Approximately 700 feet northeast of Test Stand A is a standpipe 100 feet high and 35 feet in diameter that is capable of holding approximately 750,000 gallons of liquid.

The second of the test stands to be erected, Test Stand B was in early stages of construction in September 1961. Served by road and rail, the stand is approximately 70 feet high and is surrounded by a hardstand 260' x 45', the lip of which is about 70 feet above the ravine floor. The stand has a funnel-shaped, reinforced concrete blast deflector but no visible steel flame bucket. Two large multistoried buildings lie to the rear (east) of the stand. One building is 70 feet from the stand, has at least three stories, and measures 240' x 100'. The second building is 100 feet from the stand, has two stories, and measures 100' x 55'. Both buildings have windows and do not appear to have been specially reinforced. The proximity of these buildings to the test stand invalidates a comparison of this stand with any known static liquid test stand in the U.S.S.R.

Construction of Test Stand C, started between September 1961 and August 1962, was still underway in December 1962. The newest and largest of the three test stands, it measures 115' x 70', has thus far been built to a height of approximately 70 feet, and stands about 70 feet above the floor of the ravine. It has a reinforced concrete blast deflector but no visible flame bucket. Served by road and rail, Test Stand C has a large building 280' x 100' at least three stories high situated approximately 280 feet to the east. In August 1962, before construction of this large building, Test Stand C appeared almost identical to the original test stand at Kurumoch as seen on TALENT photography of April 1960. Construction of the large building and the test stand's superstructure occurred simultaneously.

Although Test Stands A and B appear to have some tanks for fuel storage, the quantity does not approach the number usually present at U.S. facilities. It should be noted, however, that a large number of fuel storage tanks have not been observed at most of the Soviet static test stands. The above-mentioned test stands seem to have an adequate number of instrumentation structures nearby for testing operations.

Approximately 2,000 feet south-southeast of the Test Stand Area is the storage/workers' housing area. This road-served area measures about 1,500' x 1,000' and includes 2 multistoried buildings with 4 ventilators, 1 hip-roofed building, 8 flat-roofed buildings, and 50 storage buildings/workers' quarters.

The two road-served possible fueling areas are approximately 900 feet and 2,200 feet east of Test Stand A, respectively. The former area measures about 500' x 500' and consists of seven single-storied storage buildings/workers' quarters and a possible spheroidal tank. The second area measures 1,000' x 500' and contains nine workshops/laboratory buildings (two of which are multistoried) and six storage buildings/workers' quarters. Between the two areas are six probable footings approximately 100 feet apart. Obliquity and small scale of the photography precludes observation of any overhead piping that might be present in these areas.

The possible R & D/headquarters area is approximately 3,000 feet southeast of the test stands and encompasses an area that measures about 1,500' x 1,000'. Served by a good all-weather road that connects with the main route to Peiping, it also has easy access by branch roads to the possible fueling areas. The area was under construction in September 1961, had reached final stages of heavy construction by August 1962, and was essentially complete by December 1962. The facilities include 3 multistoried probable headquarters and administration buildings; 2 multistoried, flat-roofed buildings; a fabrication-type building; 17 storage/buildings/workers' quarters; and 2 multistoried, apartment-type buildings.

Table I provides descriptive information on major facilities found in the Static Test Area as shown on Figure 4.

B. Associated Fabrication Industries

Immediately across the road from the Static Test Area are two road-served, road-connected industries that do not appear to be secured (see Figures 3 and 6). Construction started at these facilities between June 1959 and September 1961 and was probably completed during the period

August - December 1962. An athletic field with bleachers is situated between the two industries. Adjacent to the industrial facilities is the former Ch'ang-hsin-tien Ammunition Storage Area and barracks that could house the workers at the industries.

One of the industries contains two large monitor-roofed buildings, a U-shaped building, and a probably 6-storied administration building. The area is probably rail served, with an offloading point adjoining one of the monitor-roofed buildings. This industry appears to be concerned with assembly, subassembly, and fabrication operations, and it is capable of producing such items as refrigerators, automobiles, or even missiles.

The second industry includes 1 monitor-roofed fabrication building; 2 L-shaped possible machine shops with 6 and 4 vents, respectively; a

Table I. Data on Static Test Area

Item	Description	Dimensions	Construction Period
1	Gable-roofed, multistoried bldg	280' x 100' x 55'	Aug 62 - Dec 62
2	Gable-roofed, multistoried bldg	240' x 100' x 55'	Jun 59 - Sep 61
3	Gable-roofed, multistoried bldg	100' x 55' x 50'	do
4	Flat-roofed, multistoried bldg	115' x 70' x 30'	do
5	Flat-roofed, bldg	200' x 30'	Sep 61 - Aug 62
6	Multistoried apartment-type bldg w/4 vents (4)	155' x 35'	Jun 59 - Sep 61
7	3-storied apartment-type bldg	220' x 70'	do
8	5-storied administration bldg	260' x 70'	do
9	Monitor-roofed assembly bldg	195' x 110' x 35'	do
10	Flat-roofed, multistoried bldg	220' x 55'	do
11	Flat-roofed, multistoried bldg	220' x 70'	do
12	Storage bldgs/workers' qtrs (16)	50' x 20'	do
13	Storage bldgs/workers' qtrs (33)	45' x 15'	do
14	Storage bldgs/workers' qtrs (17)	50' x 15'	do

multistoried building; 20 smaller buildings; and 8 groups of cylindrical, horizontal tanks or pipes approximately 115 feet long. The single-storied possible machine shops indicate casting (iron working or heating) or air reduction (production of gases) capabilities.

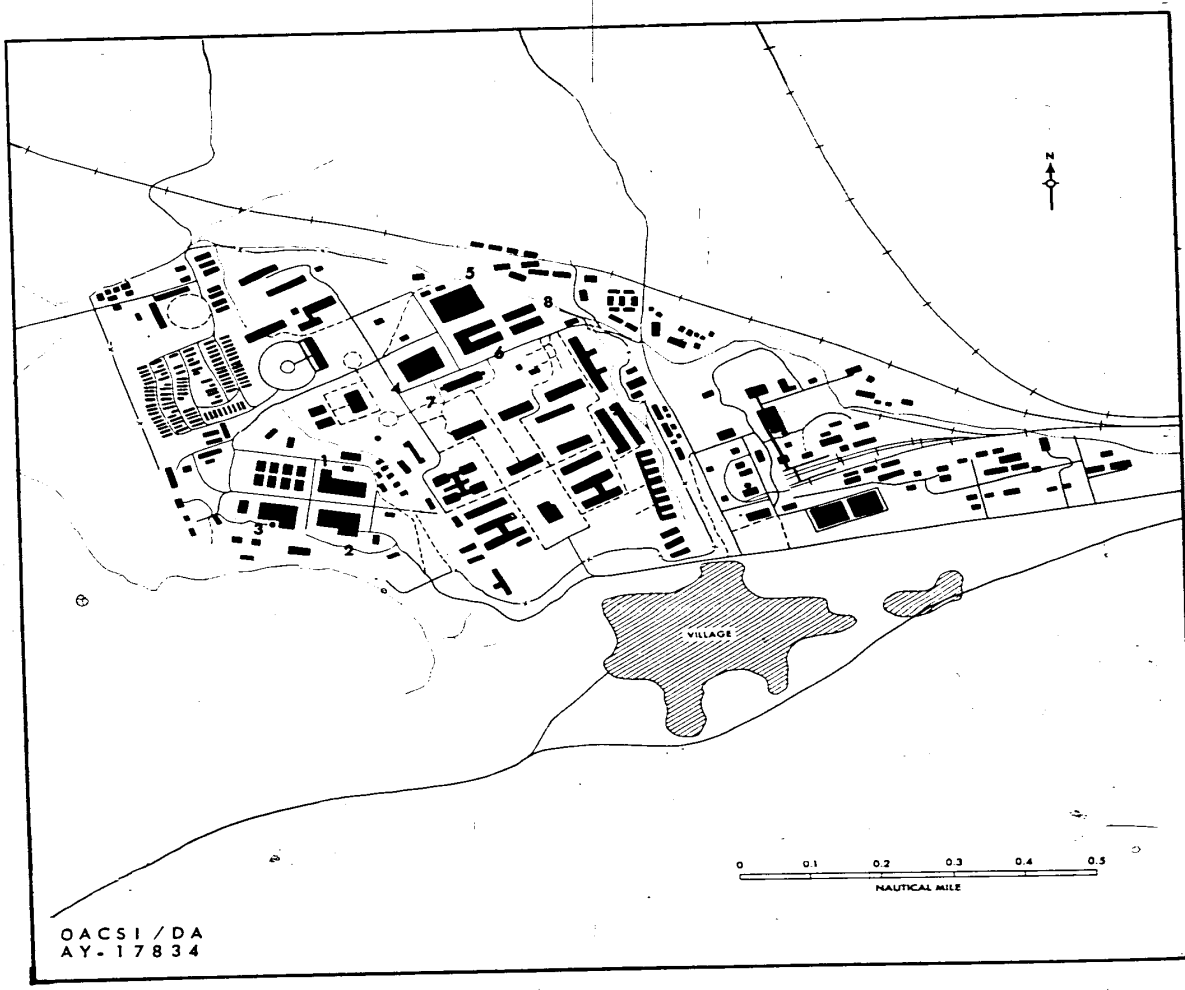

Figure 6. Assocated Fabrication Industries.

Table II below provides descriptive information on major facilities found in the associated fabrication industries.

Table II. Data on Fabrication Industries

Item	Description	Dimensions	Construction Period
1	L-shaped, monitor-roofed fabrication or assembly bldg	200' x 100' x 50' w/wing 180' x 90'	Jun 59 - Sep 61
2	L-shaped poss machine shop	155' x 110' x 30'	do
3	L-shaped poss machine shop	155' x 110' x 30' w/wing 135' x 125'	do
4	Monitor-roofed assembly-type bldg	250' x 145' x 50'	do
5	Monitor-roofed assembly-type bldg	250' x 145' x 55'	do
6	U-shaped assembly or subassembly bldg	265' x 50' x 35' w/wings 195' x 65'	do
7	Prob 6-storied administration bldg	245' x 70'	do
8	Assembly or subassembly bldgs	195' x 60' x 25'	do

C. Former Ch'ang-hsin-tien Ammunition Storage Area

The road-served former Ch'ang-hsin-tien Ammunition Storage Area, which already existed in March 1945, lies just across the road from the Static Test Area (see Figures 3 and 7). Between March 1945 and June 1959 the area was converted into a landscaped housing area. It now contains 3 probably 2-storied buildings (2 are H-shaped); 3 probably 3-storied buildings; a single-storied, multisectional building; 3 long storage buildings; approximately 15 other major buildings; and about 100 storage buildings/workers' quarters. These facilities could provide housing for workers at the adjacent fabrication industries. While a limited amount of ammunition may be stored here, ammunition storage is not the installation's primary function.

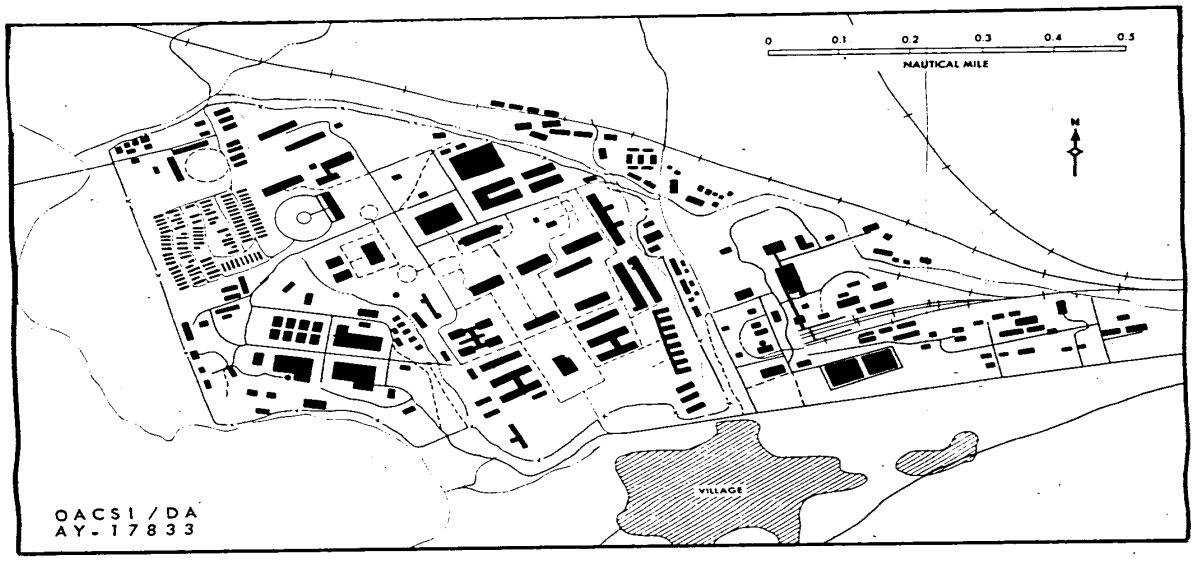

Figure 7. Former Ch'ang-hsin-tien Ammunition Storage Area.

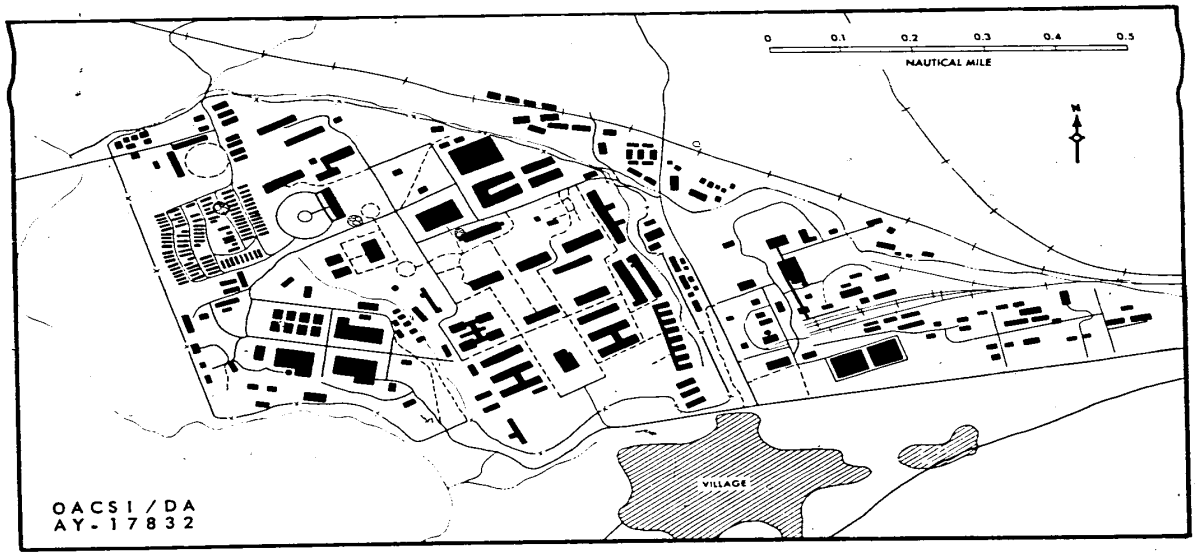

Figure 8. Facilities of Thermal Powerplant.

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D. Thermal Electric Powerplant

The road- and rail-served, coal-burning thermal electric powerplant lies about 0.5 nm southeast of the Static Test Area (see Figures 3 and 8). It has been completely developed since June 1959, its construction being timed to coincide with the construction of the static test facilities. By September 1961 some of the powerplant facilities were under construction but were not clearly defined on the photography available. Coverage of August 1962 showed that the entire area had reached late or terminal stages of construction, indicated by smoke emerging from the single smokestack. By December 1962 the plant appeared complete and operational.

The powerplant area consists of a probable spray pond 400' x 150', a coal storage area 675' x 100', a powerhouse 180' x 150' with a secondary building 140' x 70', a probable transformer or switching station, and a probable substation. A spur from an adjacent rail line serves the coal storage area, from which a conveyor belt feeds the powerhouse. Immediately south of the powerhouse is the smokestack, south of which is a possible boilerhouse. The probable transformer or switching station is situated to the west in an enclosed area that is connected to the powerhouse by a covered walkway or large pipe. The probable substation is in an open area northwest of the probable transformer or switching station. In addition to the above facilities, the powerplant has approximately 45 support buildings ranging from 40' x 30' to 165' x 40'.

E. New Military/Civilian Housing Area

The new military/civilian housing area is approximately 1 nm southeast of the Static Test Area (see Figures 3 and 9). The unsecured area is road served and lies just south of the main railroad to Peiping. Construction of the area was started between June 1959 and September 1961, and was probably completed in August 1962. Facilities consist of 33 apartment-type buildings (29 are 4-storied and 4 are 3-storied), an administration/headquarters building, approximately 10 associated buildings, a U-shaped building, and a large standpipe. Directly across the road are 5 additional

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4-storied apartment-type buildings, about 40 storage buildings/workers' quarters, and another standpipe.

Table III provides descriptive information on major facilities found in the new military/civilian housing area.

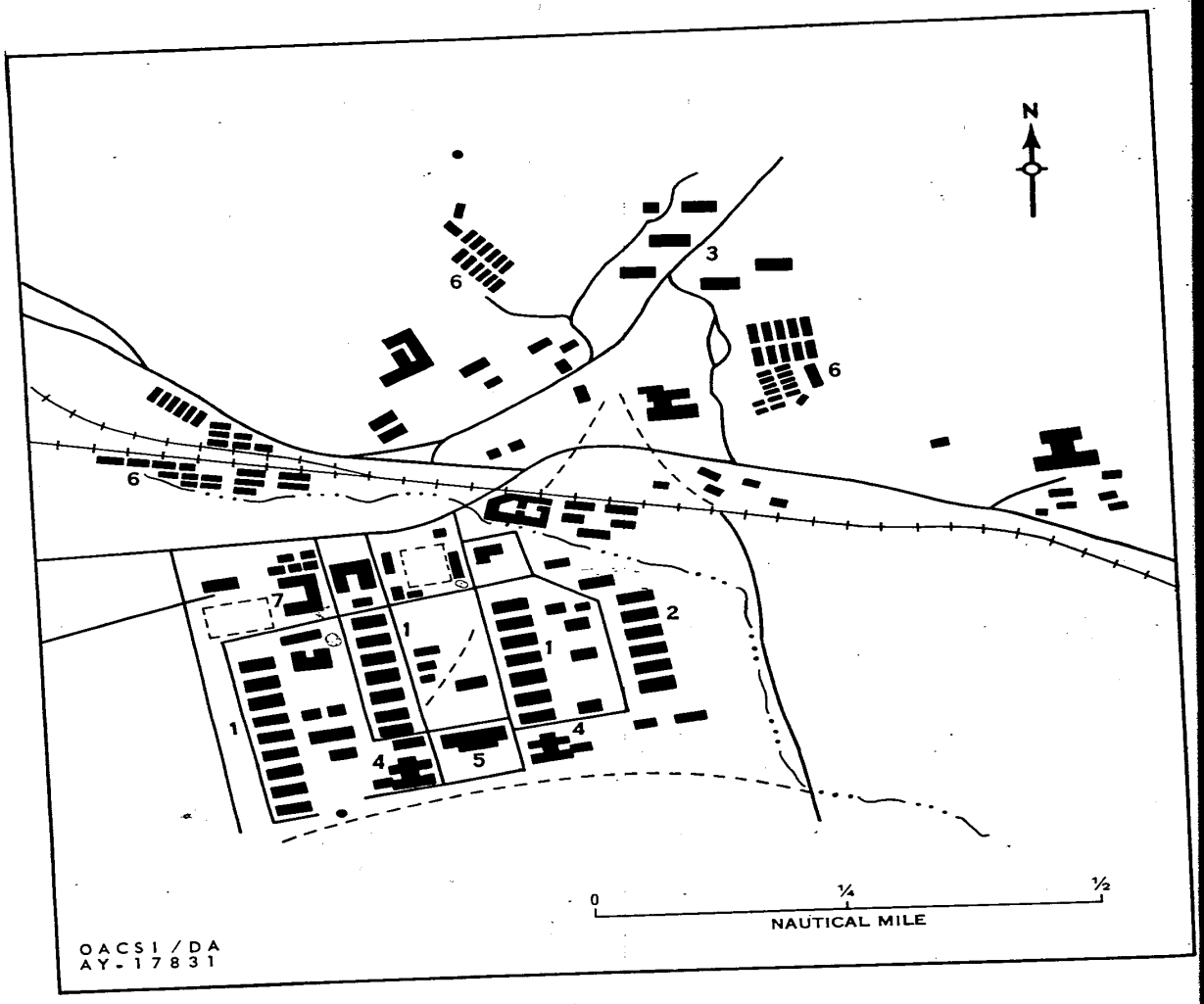


Figure 9. New Military/Civilian Housing Area.

Table III. Data on New Military/Civilian Housing Area

Item	Description	Dimensions	Construction Period
1	4-storied apartment-type bldgs (22)	145' x 35'	Jun 59 - Sep 61
2	4-storied apartment-type bldgs (7)	180' x 35'	do
3	4-storied apartment-type bldgs (5)	145' x 35'	do
4	3-storied apartment-type bldg (4)	140' x 30'	do
5	Administration-headquarters bldg	260' x 70'	do
6	Arch-roofed storage bldgs/ workers' qtrs (40)	60' x 20' to 90' x 25'	do
7	U-shaped bldg	170' x 50' w/wings 110' x 50'	Sep 61 - Aug 62

F. Military Barracks Area Nan-ying

Military Barracks Area Nan-ying is approximately 2 nm northeast of the Static Test Area (see Figures 3 and 10). The area is served only by road and is not connected by any direct route to the Static Test Area or to any of its associated facilities. An unoccupied SA-2 SAM site adjoins the barracks area on the west.

The installation is built around a nucleus of 16 barracks and 5 main administration and support buildings that existed before March 1945. By 1959 the installation had almost tripled in size with the addition of 12 probable barracks, 5 possible barracks, 14 barracks/storage buildings, 5 major storage buildings, numerous associated administration and support buildings, and a small vehicle and storage area containing 3 monitor-roofed maintenance buildings and 4 vehicle storage buildings. Associated with the installation are an athletic field, two probable subcaliber ranges, and a driver training area, part of which has the characteristic oval trackage of

Figure 10. Military Barracks Area Nan-ying.

an armor moving target range. No trenches for moving targets are visible, however, possibly because of the obliquity and scale of the [redacted]h25X1raphy of August 1962.

G. Ch'ang-hsin-tien Military Barracks and Depot

Located approximately 2.3 nm southeast of the Static Test Area the road- and rail-served Ch'ang-hsin-tien Military Barracks and Depo

was a military barracks area in 1945 (see Figures 3 and 11). Between 1945 and September 1959 part of the original barracks area was dismantled and the installation was rebuilt and enlarged. It may now house civilian workers rather than military personnel.

As modified, the central part of the area contains 16 probable barracks and at least 13 possible barracks/quarters. Numerous smaller administration and support buildings are scattered throughout the installation. It is surrounded by the following possibly associated installations and facilities: an apartment/housing area containing 7 multistoried apartment-type buildings (4 are U-shaped), a small probable apartment/housing area in early stages of construction, 5 probable workers' housing or storage areas with an average of 20 - 30 buildings (total approximately 120), a vehicle park, a small vehicle storage/maintenance area containing 10 buildings, an athletic field, and 2 probable known distance firing ranges. Descriptive information on these facilities is provided in Table IV.

Figure 11. Ch'ang-hsin-tien Military Barracks and Depot.

Table IV. Data on Ch'ang-hsin-tien Military Barracks and Depot

Item	Description	Dimensions	Construction Period
1	Storage bldgs/workers' qtrs (26)	80' x 15'	Mar 45 - Jun 59
2	Storage bldgs/workers' qtrs (9)	90' x 20'	Before Mar 45
3	Storage bldgs/workers' qtrs (31)	50' x 10' to 90' x 15'	Mar 45 - Jun 59
4	Vehicle storage/maintenance area	515' x 340'	do
5	Prob known distance ranges (2)	725' x 230'	do
6	Vehicle park	700' x 340'	do
7	Multistoried apartment-type bldgs (3)	115' x 25'	do
8	Storage bldgs/workers' qtrs (32)	55' x 20' to 85' x 20'	do
9	U-shaped, multistoried apartment bldgs (4)	140' x 25' w/wings 100' x 25'	do
10	Storage bldgs/workers' qtrs (22)	65' x 15'	do

H. Unidentified Industry

Approximately 2 nm east-southeast of the Static Test Area are road-served, unidentified industrial facilities which appear to be interdependent (see Figures 3 and 12). A roughly oval probable vehicle test track with a diameter ranging from 2,020 feet to 2,370 feet adjoins the industrial facilities and is also adjacent to Ch'ang-hsin-tien Military Barracks and Depot on the west and south and to Ch'ang-hsin-tien Railroad Yards and Locomotive Works on the east. This test track was observed in June 1959.

The industrial facilities include two secured areas and a single, unsecured building. One of the secured areas, present in June 1959, contains 10 assembly and industrial maintenance buildings (several with monitor roofs). The other secured area, built after September 1961, has three large

Figure 12. Unidentified Industry.

assembly and fabrication buildings. The unsecured building, constructed since September 1961, is U-shaped, has a monitor roof, and lies adjacent to the railroad yards and locomotive works.

Although the industrial facilities do not appear to be rail served, photography reveals that the vehicle park and the vehicle storage/maintenance area, described as being associated with Ch'ang-hsin-tien Military Barracks and Depot, are served by rail. The presence of the vehicle test track suggests the possibility that this industry produces armored vehicles.

Table V provides descriptive information on the major facilities associated with this unidentified industry.

Table V. Data on Unidentified Industry

Item	Description	Dimensions	Construction Period
1	Monitor-roofed fabrication bldg	515' x 390' x 50'	Jun 59 - Sep 61
2	Assembly bldgs (2)	200' x 80' x 20'	do
3	Monitor-roofed assembly bldg	370' x 115' x 35'	do
4	Prob vehicle test track	2,020' to 2,370' dia	do
5	U-shaped, monitor-roofed, multistoried bldg	160' x 60' w/wings 280' x 60	do
6	Prob steam generating machine shop	150' x 85' x 35'	do
7	Monitor-roofed assembly bldg	390' x 90' x 20'	do
8	Monitor-roofed assembly bldg	200' x 75' x 20'	do
9	Monitor-roofed assembly bldg	220' x 65' x 20'	do
10	Prob steam generating machine shop	70' x 60' x 20'	do
11	Assembly bldg	175' x 65'	do
12	Assembly bldg	170' x 65'	do
13	Assembly Bldg	105' x 65'	do

I. Peiping Petroleum Products Storage Kang-wa

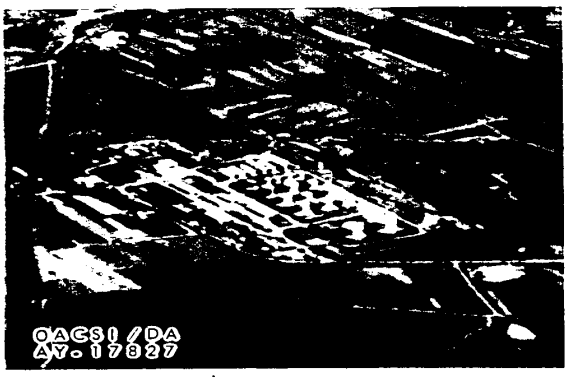


Figure 13

Served by road and rail, the secured Peiping Petroleum Products Storage Kang-wa is approximately 2.5 nm southeast of the Static Test Area (see Figures 3 and 13). This facility has remained unchanged since June 1959. It features 37 cylindrical fuel storage tanks with a total capacity of about 2.5 million gallons and also contains approximately 10 laboratory, service, or

administration buildings. Numbers of storage tanks and their approximate diameters are as follows:

Tanks	Approx. Dia.
4	10'
19	15'
4	20'
1	25'
7	30'
2	50'

J. Probable Construction Materials Processing Plant

The road- and rail-served probable construction materials processing plant is approximately 2.5 nm northwest of the Static Test Area, at the terminus of the rail line that serves the Static Test Area from Ch'ang-hsin-tien (see Figures 3 and 14). The plant proper did not exist in June 1959, although evidence was visible of possible open pit mining. In September 1961 the plant was probably under construction, and by August 1962 this construction was probably in the terminal stages. The plant was probably completed in December 1962.

The plant consists of three main buildings: a possible crusher, mill, and storage building; a probable horizontal kiln building with an adjoining smokestack; and a possible grinding building. The plant area also has four large silos or vertical kilns. A small settlement near the plant includes about 30 storage buildings/workers' quarters.

Figure 14. Probable Construction Materials Processing Plant.

K. Ch'ang-hsin-tien Railroad Yards and Locomotive Works

Facilities comprising Ch'ang-hsin-tien Railroad Yards and Locomotive Works are located on the edge of the city and about 2.5 nm east of the Static Test Area (see Figures 3 and 15). Although some additions were made between March 1945 and June 1959, the facilities have remained basically unchanged since the earlier date. These facilities include 16 large storage buildings, 12 medium storage buildings, more than 100 storage buildings/workers' quarters, a locomotive assembly building, a locomotive repair shop, a freight and passenger shop, a boiler repair shop, a foundry, a forge, an ironworking shop, 2 traverse tables, 2 locomotive inspection pits, a transformer substation, 2 freight car repair yards, an open storage area, a water tower, and 4 laboratory/research buildings.

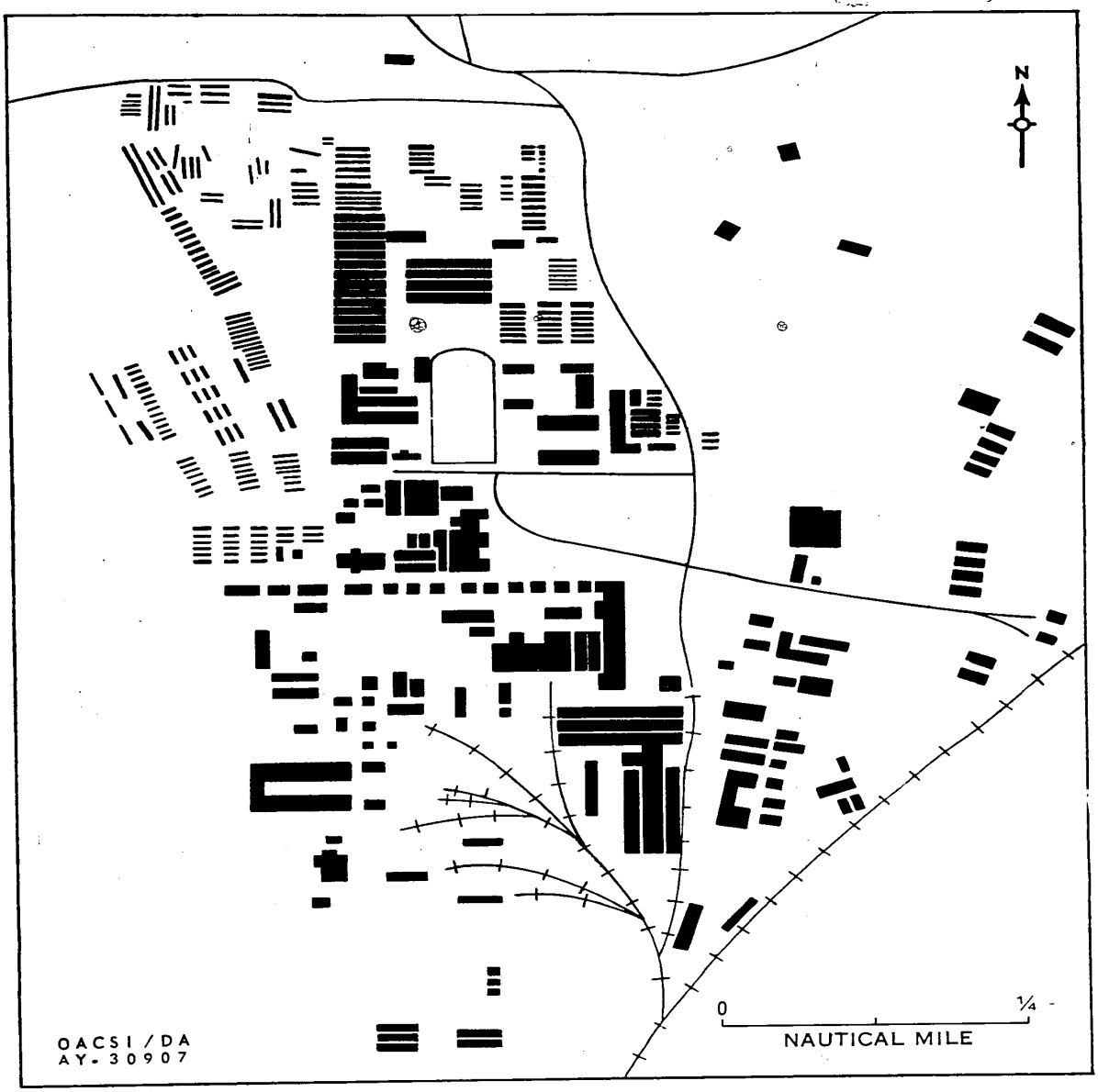


Figure 15. Ch'ang-hsin-tien Railroad Yards and Locomotive Works.

L. Unidentified Secured Area

Approximately 1.5 nm south of the Static Test Area is an unidentified secured area that has grown at a corresponding rate with the Static Test Area (see Figures 3 and 16). The area measures approximately 3,500' x 2,000' and is served by an access road running through its center that was being constructed between September 1961 and August 1962. Perpendicular to this road are six roads or ditches about 1,000 feet long. Also included in the area are a multistoried building, eight single-storied buildings, and four storage buildings/workers' quarters. Photography of December 1962 indicates that scarring is continuing at this installation.

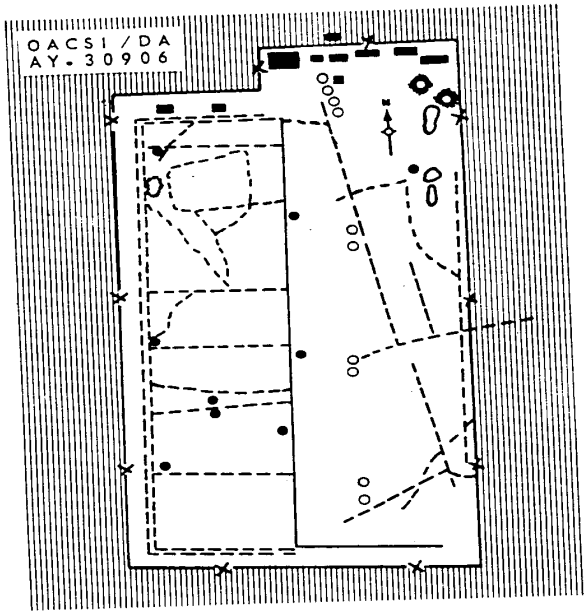


Figure 16

M. Unidentified Storage Area

Approximately 0.8 nm northwest of the Static Test Area is an unsecured, unidentified storage area. Served by road and rail, this area lies just off the rail line that runs to the Static Test Area (see Figures 3 and 17). Construction at the area began between June 1959 and September 1961. Although no structures were discernible on the September 1961 coverage, scarring indicated that construction was underway. Photography of August 1962 showed seven long, flat-roofed buildings (three under construction), six storage buildings/workers' quarters, and four sheds. By December 1962 the buildings under construction had been completed.

Descriptive information on major facilities in the area is provided in Table VI below.

Table VI. Data on Unidentified Storage Area

Item	Description	Dimensions	Construction Period
1	Flat-roofed warehouse-type bldgs (7)	130' x 50' to 200' x 50'	Aug 62 - Dec 62
2	Storage bldgs/workers' qtrs (6)	80' x 35 to 60' x 25'	Sep 61 - Aug 62
3	Sheds (4)	20' x 20'	do

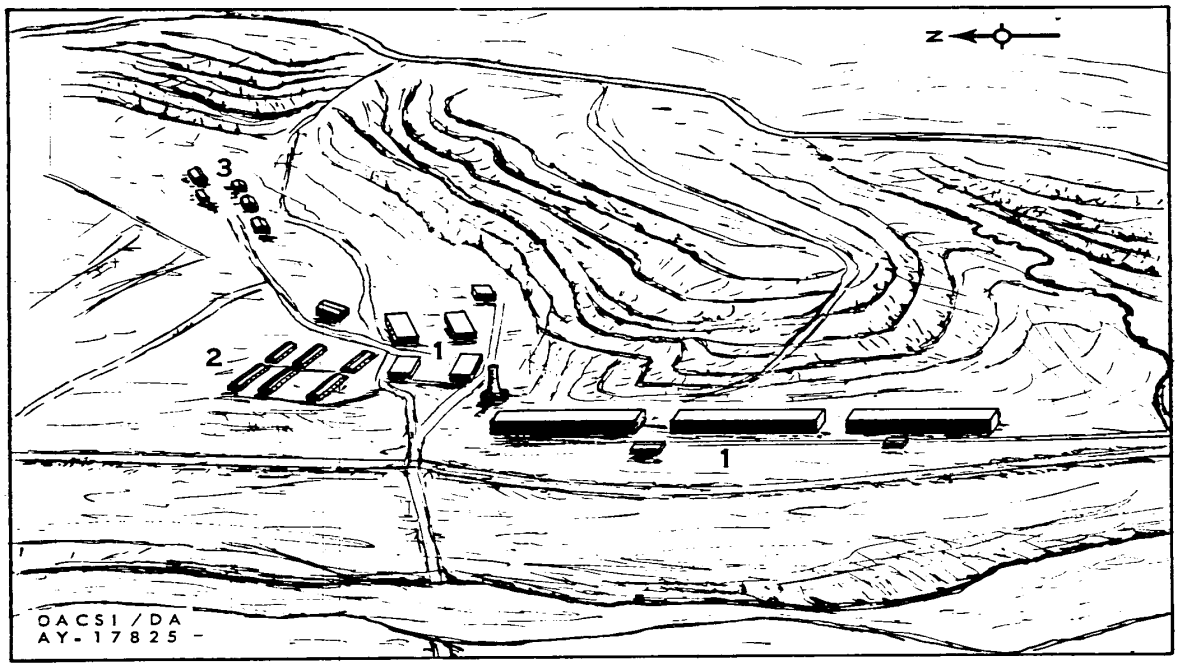
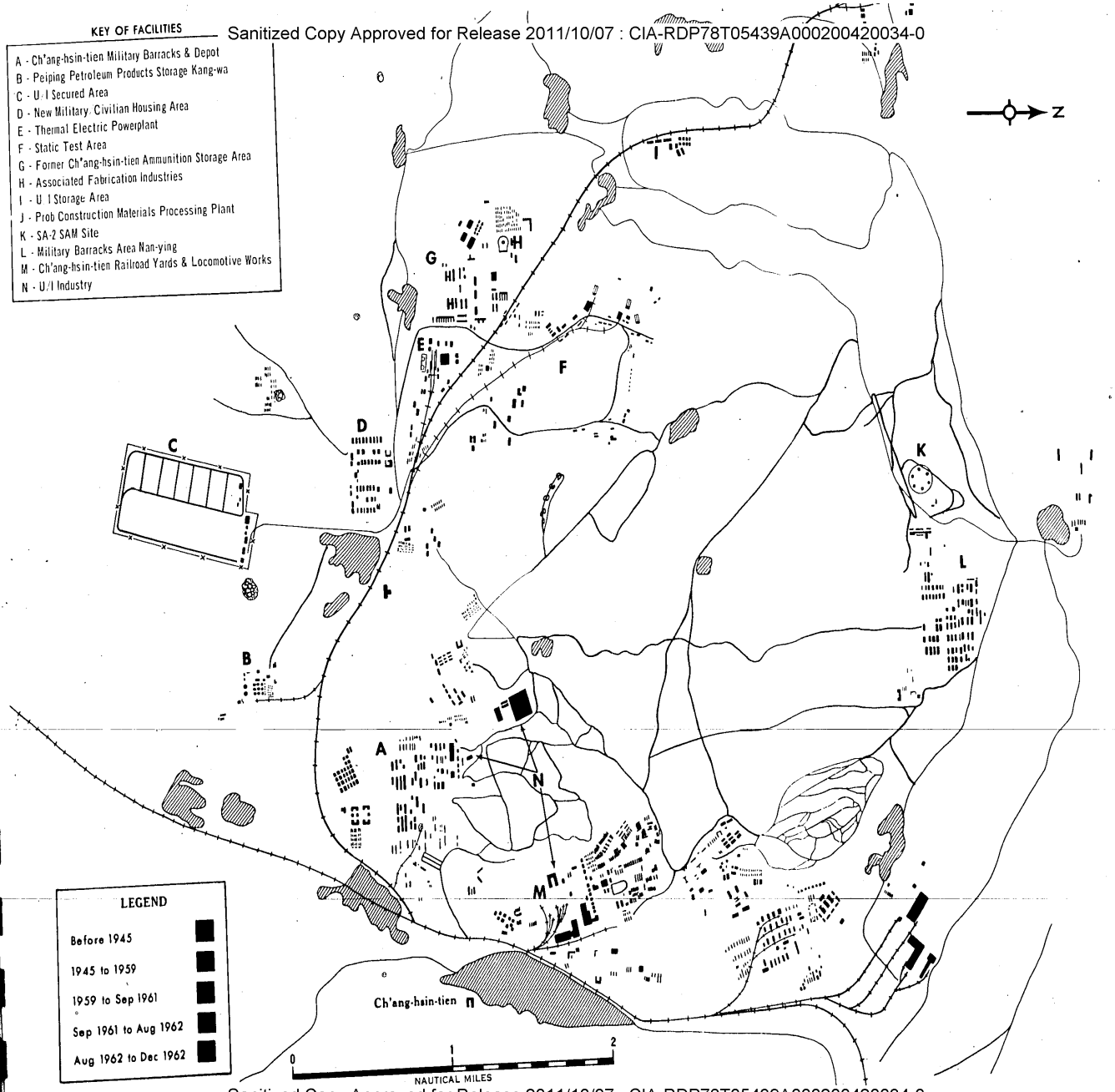


Figure 17. Unidentified Storage Area.



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B. Maps

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C. Collateral Material

U.S. Army Missile Command, MIS 25-63, Ch'ang-hsin-tien Missile R & D/Test Center (S), Jun 63 (SECRET 25X1

NPIC/R-27/63, Missile and Propulsion Test Complex Near Peiping, China, Mar 63 (TOP SECRET RUFF 25X1